# STRATEGIC INVESTMENT DECISION AND EVALUATION TO ACQUIRE 1,000 TON LAUNCHER GANTRY FOR TOLL ROAD HARBOUR ROAD PROJECT OF PT WIJAYA KARYA (PERSERO), TBK. INDONESIA



# **THESIS**

By:

**Alfi Trianto (20222013)** 

**Academic Supervisor:** 

Prof. Dr. Wiwiek Mardawiyah Daryanto, SE., Ak., M.M., CMA.

# MASTER OF BUSINESS ADMINISTRATION PROGRAM IPMI INSTITUTE JAKARTA

# STRATEGIC INVESTMENT DECISION AND EVALUATION TO ACQUIRE 1,000 TON LAUNCHER GANTRY FOR TOLL ROAD HARBOUR ROAD PROJECT OF PT WIJAYA KARYA (PERSERO), TBK. INDONESIA

Prepared By:

**Alfi Trianto (20222013)** 

### **A THESIS**

Submitted in partial fulfillment of the requirements for the degree of Master Business Administration

### CERTIFICATE OF APPROVAL

Name & Student ID : Alfi Trianto (20222013)

Topic : Strategic Investment Decision And Evaluation To

Acquire 1,000 Ton Launcher Gantry For Toll Road Harbour Road Project of PT Wijaya Karya (Persero),

Tbk. Indonesia

We hereby declare that this Thesis is from the student's own work, has been read and presented to IPMI Institute's Board of Examiners, and has been accepted as part of the requirements needed to obtain a Bachelor of Business Administration Degree and has been found to be satisfactory.

Jakarta, February 21, 2025

Examined by,

Prof. Dr. Wiwiek M. Daryanto, SE., Ak., MM, CMA

Advisor

Prof. Ir. Roy H.M. Sembel, MBA, Ph.D, CSA, CIB,

> CIIM Chair of Examiner

Dr. Samuel PD Anantadjaya, BSc, MBA, MM, CFC, CFP,

CBA

Examiner

Acknowledged by,

Prof. Ir. Dedi Fardiaz, Ph.D

Vice Rector of Academic and Student Affairs

## NON-PLAGIARISM DECLARATION FORM

This Thesis is a presentation of our original research work. Wherever contribution of others are involved, every effort is made to indicate this clearly, with due reference to the literature, and acknowledgement of collaborative research and discussions.

Also, this work is being submitted in partial fulfillment of the requirements for the Master of Business Administration degree and has not previously been accepted in substance for any degree and is not being concurrently submitted in candidature for any degree.

Jakarta, February 21, 2025

THE TAKE

Alfi Trianto

# LIST OF CONTENT

CERTIF	TICATE OF APPROVAL	i		
NON-PL	LAGIARISM DECLARATION FORM	ii		
LIST OF CONTENTiii				
LIST OF	F FIGURES	vi		
LIST OF TABLESvii				
LIST OF	F EQUATION AND FORMULA	viii		
ACKNO	OWLEDGEMENT	ix		
ABSTRA	ACT	X		
CHAPT	ER 1 INTRODUCTION	1		
1.1	Background	1		
1.2	Background of Launcher Gantry (LG)	4		
1.3	Launching Girder	4		
1.4	Research Problem	5		
1.5	Research Question	6		
1.6	Research Objective	7		
1.7	Scope and Limitation of The Study	7		
1.8	Previous Research	8		
1.9	Benefit of The Study	10		
1.10	Thesis Structure	10		
CHAPT	ER 2 LITERATURE REVIEW	12		
2.1	SWOT Analysis	12		
2.1.1	Definition of SWOT	12		
2.1.2	Stages of SWOT Analysis	13		
2.1.3	SWOT Factors	13		

	2.1.4	SWOT Matrix	. 14
	2.2	SWOT Strategy	. 15
	2.3	Capital Budgeting	. 16
	2.3.1	Weighted Average Cost of Capital (WACC)	. 17
	2.3.2	Payback Period	. 18
	2.3.3	Return on Investment	. 19
	2.3.4	Net Present Value	. 19
	2.3.5	Profitability Index (NPV Index)	. 20
	2.3.6	Discounted Payback Period	. 21
	2.3.7	Internal Rate of Return	. 21
	2.4	Sustainable Development Goals (SDG's)	. 22
C	HAPTI	ER 3 METHODOLOGY	. 25
	3.1	Introduction	. 25
	3.2	Research Design	. 26
	3.2.1	Stage 1 - Analyze And Evaluate The Most Suitable Operation	onal
	Strateg	gy By The Interview With Project Leader of The Company	. 26
	3.2.2	Stage 2: Measure and Evaluate the Feasibility	. 27
	3.2.3	Stage 3: Non-Monetary Analysis	. 27
CHAPTER 4 FINDING, ANALYSIS AND DISCUSSION		. 29	
	4.1	Introduction	. 29
	4.2	Interview with the Top Management to Develop SWOT Analysis	. 29
	4.3	Capital Budgeting Analysis	. 35
	4.3.1	Weighted Average Cost of Capital (WACC)	. 38
	4.3.2	Payback Period	. 39
	4.3.3	Return on Investment (ROI)	. 39
	4.3.4	Net Present Value (NPV)	40

	4.3.5	Profitability Index (PI)	40
	4.3.6	Discounted Payback Period.	41
	4.3.7	Internal Rate of Return (IRR)	41
	4.4	Sensitivity Analysis	43
	4.5	Non-Monetary Analysis	44
C	СНАРТЕ	ER 5 CONCLUSIONS AND RECOMMENDATION	47
	5.1	Conclusion	47
	5.1.1	SWOT Analysis	47
	5.1.2	Capital Budgeting Analysis	48
	5.1.3	Sensitivity Analysis	49
	5.1.4	Sustainable Development Goals (SDGs) Contribution	49
	5.2	Contribution of The Study	50
	5.2.1	Theoretical Implication	50
	5.2.2	Managerial Implication	51
	5.2.3	Limitation of Study	51
	5.2.4	Recommendation for Future Study	53
REFERENCES			54
A	APPENE	DIX 1	57
A	PPEND	DIX 2	61
A	APPENE	DIX 3	63
APPENDIX 465			
APPENDIX 566			
APPENDIX 667			

#### LIST OF FIGURES

Figure 1.1 Budget of Income and Spending (APBN) of Ministry of Public Works and People's Housing for 2022 According to Shopping Category (Source: Ministry of Public Works and People's Housing Budget Report, 2021) Figure 1.2 Indonesia Population 2018 – 2022 (Source : Badan Pusat Statistik Indonesia, 2022) Figure 1.3 Harbor Road II Toll Plan (Source: Ministry of Public Works and People's Housing Budget Report, 2021) Figure 1.4 Launcher Gantry Parts (Source: Comtec's Manual Book) Figure 2.2 Sustainable Development Goals SDG's (Source: The Sustainable Development Goals Report, 2021) Research Methodology (Source: Researcher, 2025) Figure 3.1 Figure 3.2 Flowchart Workflow for Feasibilty Study (Source: Researcher, 2025) Figure 4.1 Bridge Structure Design Harbour Road 2 Tol Road Project (Source: PT Wijaya Karya (Persero), Tbk., 2021)

# LIST OF TABLES

Table 1.1	List of Launcher Gantry Ownership in Indonesia	
Table 1.2	List of Previous Study	
Table 2.1	SWOT Matrix	
Table 4.1	Structure Design Spesification	
Table 4.2	Launcher Gantry 1,000 Tons Spesification	
Table 4.3	SWOT Analysis of the 1000 Ton Launcher Gantry Investment for the Harbor Road 2 Toll Road Project of PT Wijaya Karya (Persero), Tbk.	
Table 4.4	Capital Budgeting Assumptions	
Table 4.5	Yearly Income Statement Forecast	
Table 4.6	Net Cash Flow Forecasting	
Table 4.7	Detailed Yearly ROI	
Table 4.8	Summary Capital Budgeting Analysis	
Table 4.9	Summary of Capital Budgeting Analysis with Sensitivity Analysis Results	

# LIST OF EQUATION AND FORMULA

Equation (2-1)	Weighted Average Cost of Capital (WACC) Formula
Equation (2-2)	Risk-free Rate Formula
Equation (2-3)	Payback Period (PP) Formula
Equation (2-4)	Return On Investment (ROI) Formula
Equation (2-5)	Net Present Value (NPV) Formula
Equation (2-6)	Profitability Index (PI) Formula
Equation (2-7)	Internal Rate of Return (IRR) Formula

#### **ACKNOWLEDGEMENT**

To begin with, the author would like to thank Allah SWT for giving grace and blessing; the author can finish this thesis to fulfill one of the requirements to obtain a Master of Business Administration Degree from IPMI Institute.

The author realized that without the help and encouragement of various parties, the completion of this thesis would not have materialized. May Allah SWT always repay all the good given. Therefore, with sincerity and humility, the author expresses his highest gratitude and appreciation to:

Both author's parents, ibu Dra. Antieng Tri Swandari and bapak Ir. Nuk Prasetya, MM thank you for the days you have spent caring for, loving, educating, and guiding, and always praying for the author.

The author's family, the author's wife, Arya Juniah, SE, has supported the author in continuing his studies and always accompanies the author with patience and sacrifice during online lectures. Thank you also to the author's daughters Aurora Zaviera Trianto and Aruna Zahira Trianto who always helps the author during college and to be more enthusiastic in college. This author's master's degree is presented to the author's family.

Prof. Dr. Wiwiek Mardawiyah Daryanto, SE., Ak., M.M., CMA. as the advisor who guided the author through the writing process of this thesis; shared the knowledge and experiences; as well as spared the time for all of the mentoring sessions.

The management, faculty members, and staff of IPMI Institute who have helped the author throughout four semesters and who have shared memorable knowledge, stories, and experiences

All of the author's friends in the EMBA class of 2021 have shared unforgettable memories, stories, and support throughout the author's college life.

Other parties are very influential in completing the thesis that the author cannot mention one by one.

#### **ABSTRACT**

The East Ancol – Pluit Toll Road (Harbour Road) is an elevated toll road designed to alleviate traffic congestion and enhance mobility in North Jakarta. The project aims to improve transportation efficiency, supporting economic growth through faster and more effective movement of goods and people. Executed by PT Wijaya Karya (Persero), Tbk. (WIKA), a state-owned enterprise under Infrastructure I, the project began in 2021 and is expected to be completed by 2027. The construction utilizes Precast Box Girders, requiring a 1,000-ton capacity Launcher Gantry (LG). This study assesses the feasibility of investing in the 1,000-ton LG, considering budget, safety, and quality improvements. A mixed-method approach is applied, integrating SWOT Analysis, Capital Budgeting techniques (WACC, Payback Period, ROI, NPV, PI, and IRR), and Sustainability Assessment (SDGs). The results show a WACC of 11.68%, a payback period of 3.04 years, an ROI of 89.10%, an NPV of IDR 58.99 billion, a PI of 2.24, and an IRR of 34.25%, confirming financial feasibility. A sensitivity analysis evaluates the impact of a 5% annual increase in operational costs, mainly due to rising labor wages. The findings indicate a slight decline in financial metrics, with a payback period of 3.05 years, an ROI of 85.43%, an NPV of IDR 57.77 billion, a PI of 2.21, and an IRR of 33.96%. Despite these changes, the project remains financially viable. Moreover, the investment aligns with SDGs by contributing to economic growth, infrastructure development, and sustainability. This study concludes that investing in the 1,000-ton Launcher Gantry is a strategically sound decision, ensuring financial, operational, and sustainability benefits, even under potential cost increases.

**Keywords:** Capital Budgeting, Strategic Analysis, Financial, Feasibility, 1,000 Ton Launcher Gantry